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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/769,169	01/30/2004	Louis J. Spadaccini	67,097-024; EH-11034	7800

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EXAMINER	
HOPKINS, ROBERT A	

ART UNIT	PAPER NUMBER
1724	

DATE MAILED: 06/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/769,169	SPADACCINI ET AL.	
	Examiner	Art Unit	
	Robert A. Hopkins	1724	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 May 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 15-21 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Jensvold et al(5409524).

Jensvold et al teaches a microporous polymer membrane comprising micropores that have been reduced in size from a first size to a second size by a heat treatment, the second size being large enough to generally allow migration of a gas through the microporous membrane and small enough to generally prevent migration of a liquid into the microporous polymer membrane.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Spadaccini et al(6709492) taken together with Jensvold et al(5409524).

Spadaccini et al teaches a fuel system comprising a fuel storage tank(22), a downstream(14), a fluid connection for communicating fuel from the fuel storage tank to

the downstream use, and a fuel deoxygenator mounted in the fluid connection, the fuel deoxygenator having a microporous polymer membrane disposed therein that defines a fuel passage within the fuel deoxygenator device for flow of fuel therethrough. Spadaccini et al further teaches wherein the microporous polymer membrane is comprised of micropores that have been reduced in size from a first size to a second size by a heat treatment, the second size being large enough to generally allow migration of a gas through the microporous polymer membrane and small enough to generally prevent migration of fuel into the microporous polymer membrane. Jensvold et al teaches a microporous polymer membrane which is heat treated(column 3 lines 40-47), wherein the micropores have been reduced in size from a first size to a second size. It would have been obvious to someone of ordinary skill in the art at the time of the invention to provide a heat treated membrane for the membrane of Spadaccini et al in order to relax excess free volume in the polymer, and increase the selectivity of the untreated membrane(column 3 lines 64-68).

Spadaccini et al further teaches wherein the microporous polymer membrane is supported by a substrate Jensvold et al further teaches wherein the heat treatment comprises heating the microporous polymer membrane at a temperature between about 130 degrees C and about 150 degrees C for about two hours(column 3 lines 40-50). Spadaccini et al further teaches wherein the microporous polymer membrane is an amorphous fluoropolymer.

Claims 6-14 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Spadaccini et al (6709492) taken together with Jensvold et al(5409524).

Spadaccini et al teaches a method of preventing a liquid from migrating into a microporous polymer membrane comprising placing a microporous polymer membrane in a fluid separating device. Spadaccini et al is silent as to heating a microporous polymer membrane to a predetermined temperature for a predetermined time to reduce the size of micropores in the microporous polymer membrane from a first size to a second size ,the second size being large enough to generally allow migration of a gas through the microporous polymer membrane and small enough to generally prevent migration of liquid into the microporous polymer membrane. Jensvold et al teaches a microporous polymer membrane which is heat treated(column 3 lines 40-47), wherein the micropores have been reduced in size from a first size to a second size. It would have been obvious to someone of ordinary skill in the art at the time of the invention to provide a heat treated membrane for the membrane of Spadaccini et al in order to relax excess free volume in the polymer, and increase the selectivity of the untreated membrane(column 3 lines 64-68).

Jensvold et al further teaches wherein the predetermined temperature is above 100 degrees C. Jensvold et al further teaches wherein the polymer of the microporous polymer membrane has a glass transition temperature and the predetermined temperature is greater than the glass transition temperature. Jensvold et al further teaches wherein the polymer of the microporous polymer membrane has a glass transition temperature and the predetermined temperature is about equal to the glass transition temperature. Jensvold et al further teaches wherein the predetermined temperature is between about 130 degrees C and about 150 degrees C. Jensvold et al

further teaches wherein the predetermined time is about two hours. Spadaccini et al further teaches wherein the microporous polymer membrane is an amorphous fluoropolymer. Spadaccini et al further teaches wherein the fluid separating device is a fuel deoxygenator in a fuel system. Spadaccini et al further teaches wherein the fluid separating device is in an aircraft. Jensvold et al further teaches forming the microporous polymer membrane in a step that is separate and distinct from heating the microporous polymer membrane to reduce the size of the micropores.

Claims 15-21 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Spadaccini et al (6709492) taken together with Jensvold et al(5409524).

Spadaccini et al teaches a microporous polymer membrane having micropores with a size for allowing migration of a gas therethrough. Spadaccini et al is silent as to wherein the microporous polymer membrane is comprised of micropores that have been reduced in size from a first size to a second size by a heat treatment, the second size being large enough to generally allow migration of a gas through the microporous polymer membrane and small enough to generally prevent migration of fuel into the microporous polymer membrane. Jensvold et al teaches a microporous polymer membrane which is heat treated(column 3 lines 40-47), wherein the micropores have been reduced in size from a first size to a second size. It would have been obvious to someone of ordinary skill in the art at the time of the invention to provide a heat treated membrane for the membrane of Spadaccini et al in order to relax excess free volume in the polymer, and increase the selectivity of the untreated membrane(column 3 lines 64-68).

Jensvold et al further teaches wherein the predetermined temperature is above 100 degrees C. Jensvold et al further teaches wherein the polymer of the microporous polymer membrane has a glass transition temperature and the predetermined temperature is greater than the glass transition temperature. Jensvold et al further teaches wherein the polymer of the microporous polymer membrane has a glass transition temperature and the predetermined temperature is about equal to the glass transition temperature. Jensvold et al further teaches wherein the predetermined temperature is between about 130 degrees C and about 150 degrees C. Jensvold et al further teaches wherein the predetermined time is about two hours. Spadaccini et al further teaches wherein the microporous polymer membrane is an amorphous fluoropolymer.

Claims 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Spadaccini et al (6709492) taken together with Jensvold et al(5409524).

Spadaccini et al teaches a fuel deoxygenator device comprising a fuel side and a non-fuel side separated by a microporous polymer membrane for removing gas from fuel flowing in contact with the microporous polymer membrane on the fuel side. Spadaccini et al is silent as to wherein the microporous polymer membrane is comprised of micropores that have been reduced in size from a first size to a second size by a heat treatment, the second size being large enough to generally allow migration of a gas through the microporous polymer membrane and small enough to generally prevent migration of fuel into the microporous polymer membrane. Jensvold et al teaches a microporous polymer membrane which is heat treated(column 3 lines

40-47), wherein the micropores have been reduced in size from a first size to a second size. It would have been obvious to someone of ordinary skill in the art at the time of the invention to provide a heat treated membrane for the membrane of Spadaccini et al in order to relax excess free volume in the polymer, and increase the selectivity of the untreated membrane(column 3 lines 64-68).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert A. Hopkins whose telephone number is 571-272-1159. The examiner can normally be reached on Monday-Thursday, 7:30am-5pm, every Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571-272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Rah
May 31, 2006

Robert A. Hopkins
ROBERT A. HOPKINS
PRIMARY EXAMINER
AU. 1724